# CMDS Database Users Guide

The CMDS Database holds diverse information about experiments. It contains parameter information such as values, alarm limits, and sensors used to sample the parameter data. It contains information about the experiment apparatus, the start and end date of the experiment, and who was conducting the experiment. It contains information about when the equipment was last calibrated and what instrument was used in calibration. The database also contains information about any anomalies that occurred during the experiment in the way of alarms indicating the parameter values were not in accordance with the experiment design. The database also allows the parameter data to be statistically processed for inclusion in a report generated at the end of the experiment. It allows manual data entry as well as automatic entry by the equipment controllers. Comma delimited data such as spreadsheet data can also be processed and entered into the database using the *Process Source File* utility.

The *Support Codes* menu (shown in Figure 1. Support Codes) consist of tables that hold information that is used by other tables in the database. The codes are established once and used many times forcing consistency as they are selected instead of entered where used. Most of these tables are created by engineering support personnel, but the Personnel table will be updated by any user of the system as it contains personnel contact data such as phone numbers and email addresses for alarm notification.

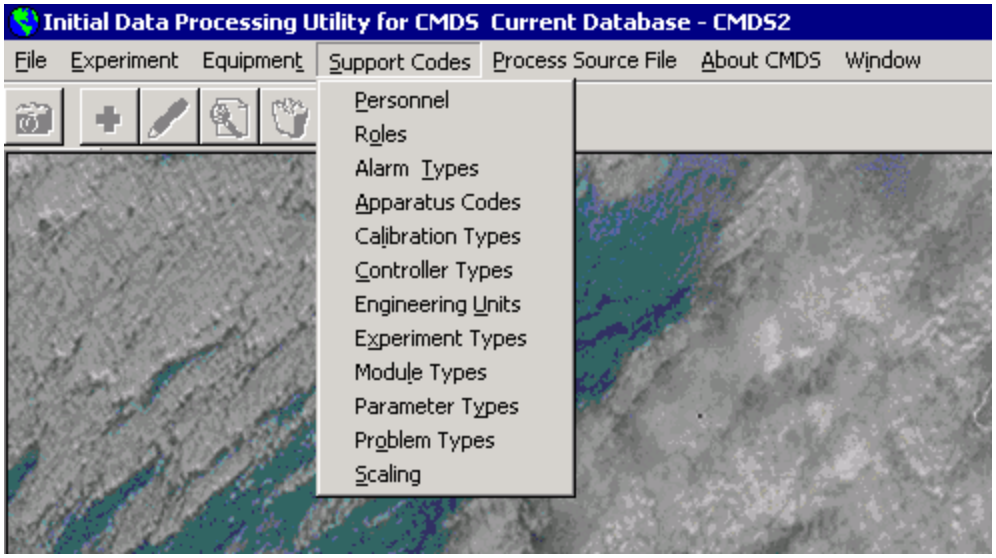

Figure1. Support Codes

The Equipment menu (shown in Figure 2. Equipment) has entry screens for the various apparatus that are used to conduct the experiment organized as a parent apparatus and child apparatus showing the organization of the experiment equipment. Information about experiment controllers, modules that are plugged into the controllers and sensors that are attached to the modules are also entered into the system using screens provided for that purpose. These screens are used by engineering support personnel.

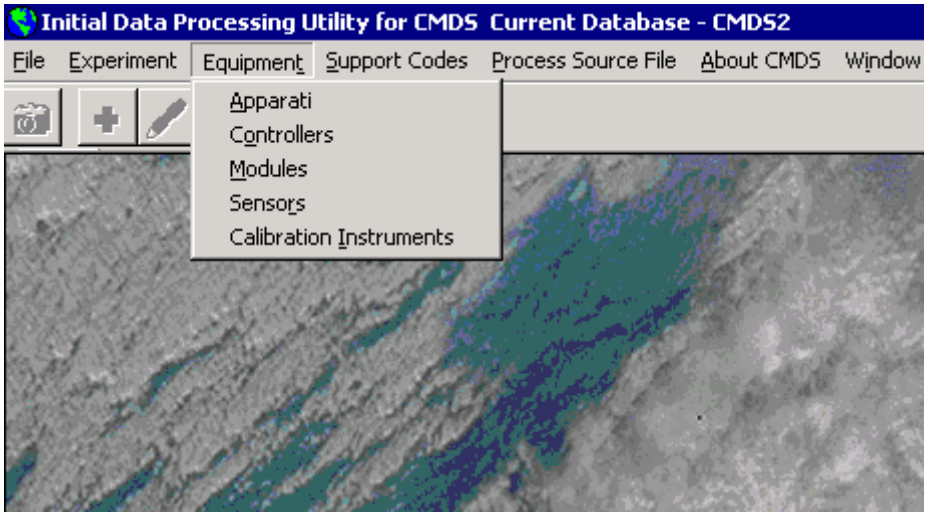

Figure 2. Equipment

The *Experiment* menu (Figure 3.Experiment) has the experiment input screens, parameter definition screens, alarm configuration screens and manual data entry screens. These are the forms that will be used most by the Principal Investigators and their staff.

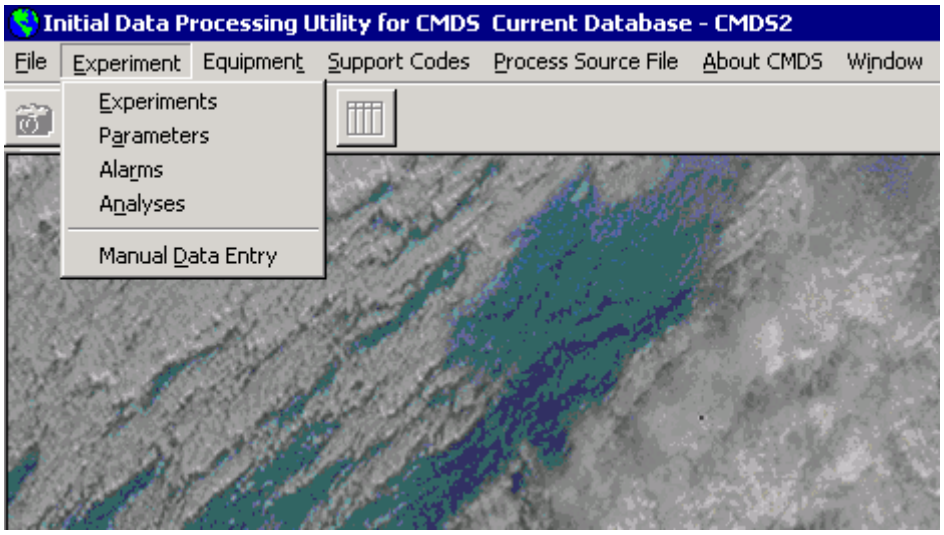

Figure 3. Experiment

Selecting *Experiments* from the menu brings up a list of experiments that have been entered into the database. Selecting an entry and right clicking provides a popup menu as shown in Figure 4. Experiments Menu. The options provided are to view an entry, edit an entry, add an entry or delete an entry.

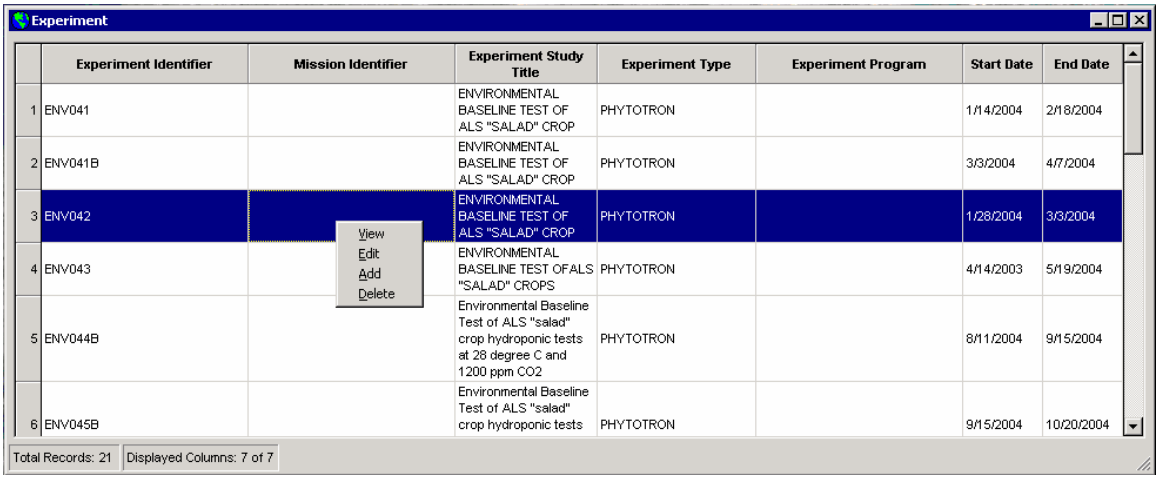


Figure 4. Experiments Menu

Selecting *Add* provides a blank Experiment Entry Form. Shown in Figure 6. Experiment Form is an example of a filled in form that would be seen by selecting *View* from the menu.

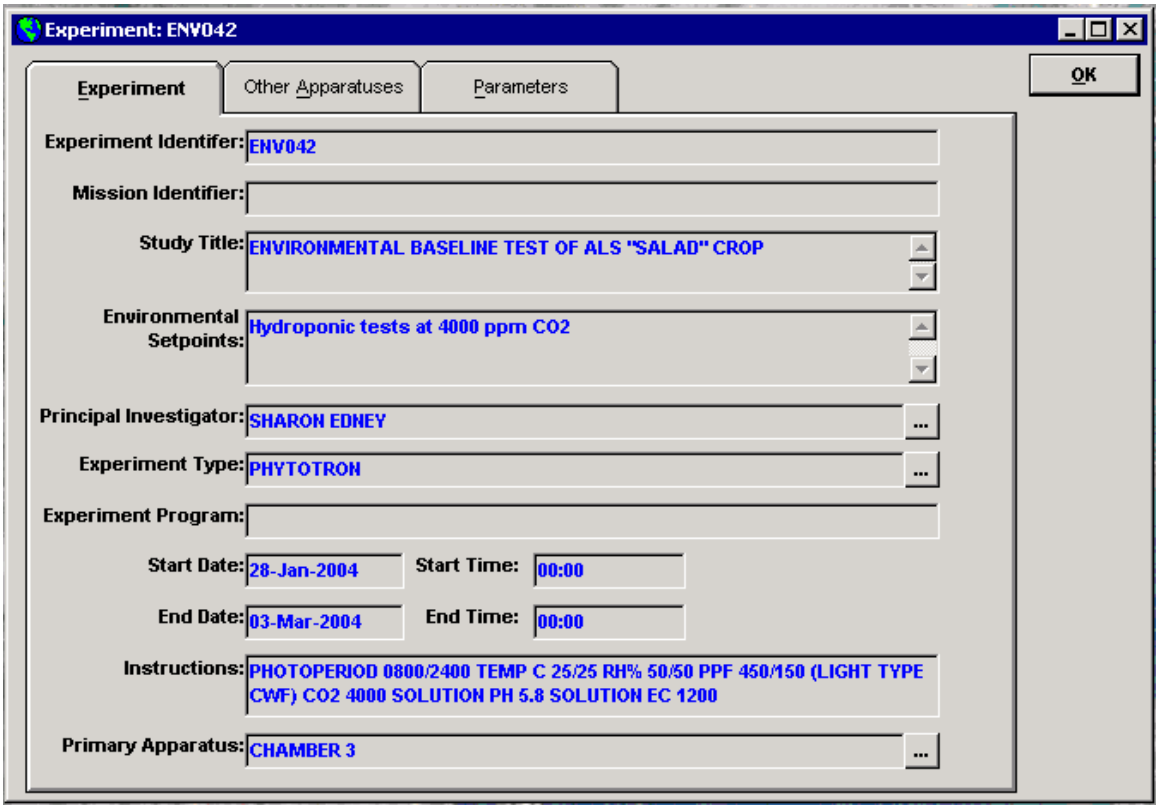


Figure 5. Experiment Entry Form

Selecting the *Parameters* Tab brings up the form shown in Figure 6. Experiment Parameters Form. This shows the parameters that have been assigned to this experiment.

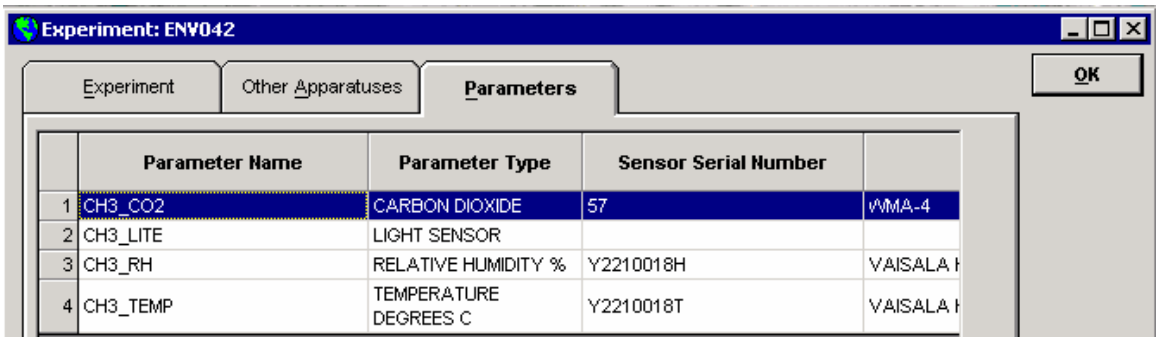


Figure 6. Experiment Parameters Form

Going to the *Experiment Menu* and selecting *Parameters* brings up the form shown in Figure 7. Parameters. Right clicking on the form brings up a menu that allows parameters to be viewed, edited or added to the CMDS system.

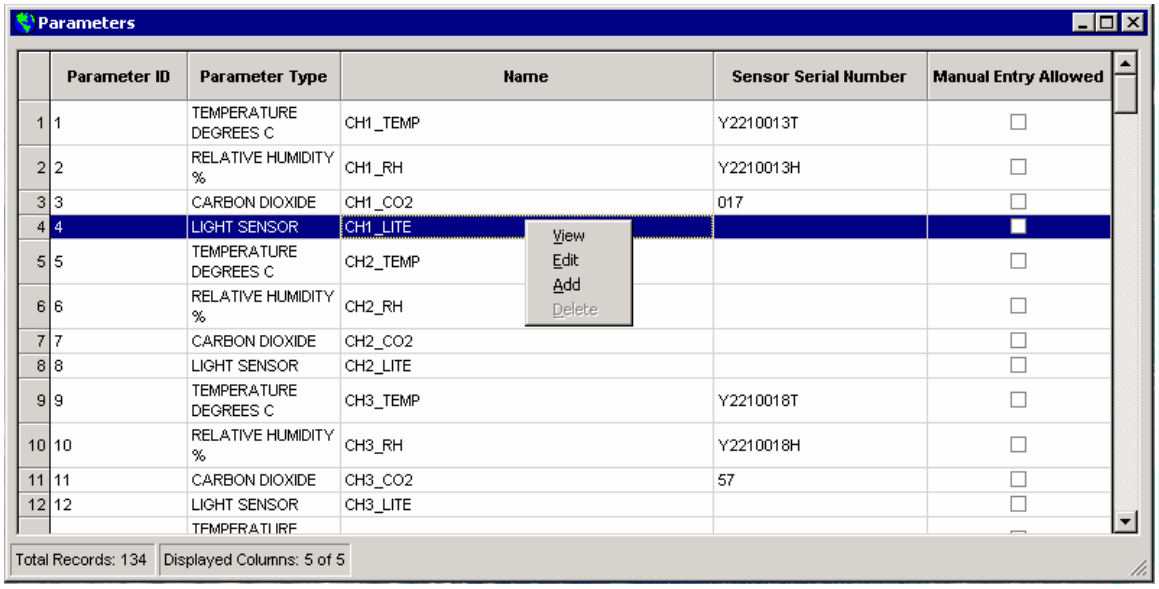


Figure 7 Parameters

If *Add* is selected an entry form is displayed as in Figure 8. Parameter Entry Form.

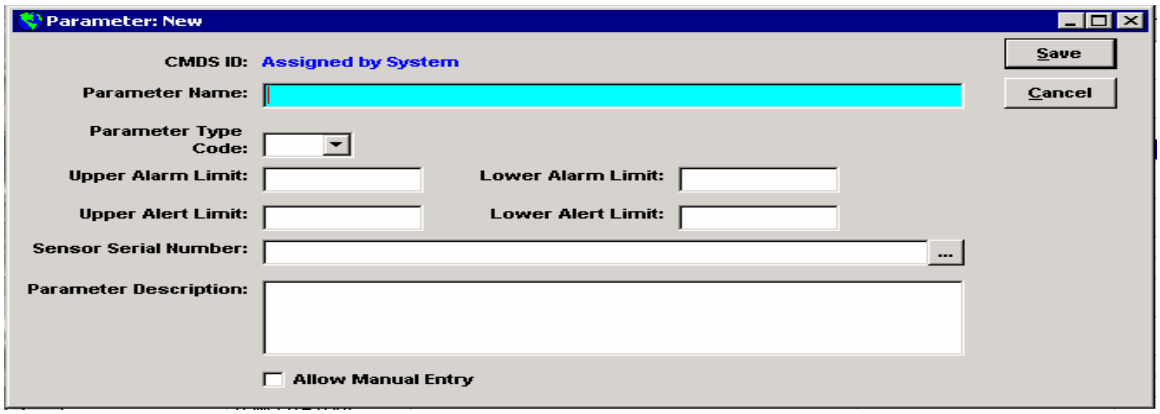


Figure 8. Parameter Entry Form

The Parameter Name is the only required field, the alarm limits are implemented on the Experiment Setpoint Entry Screen and are not functional here (and will be removed shortly).

Parameters that are manually collected and entered into the system will require the *Allow Manual Entry* checkbox selected.

Selecting *Alarms* at the *Experiment* Menu brings up the Alarm screen. Right clicking on the screen brings up a menu allowing one to View, Edit or Add Alarms. Add brings up the blank form shown in Figure 9. Add Alarm Form.

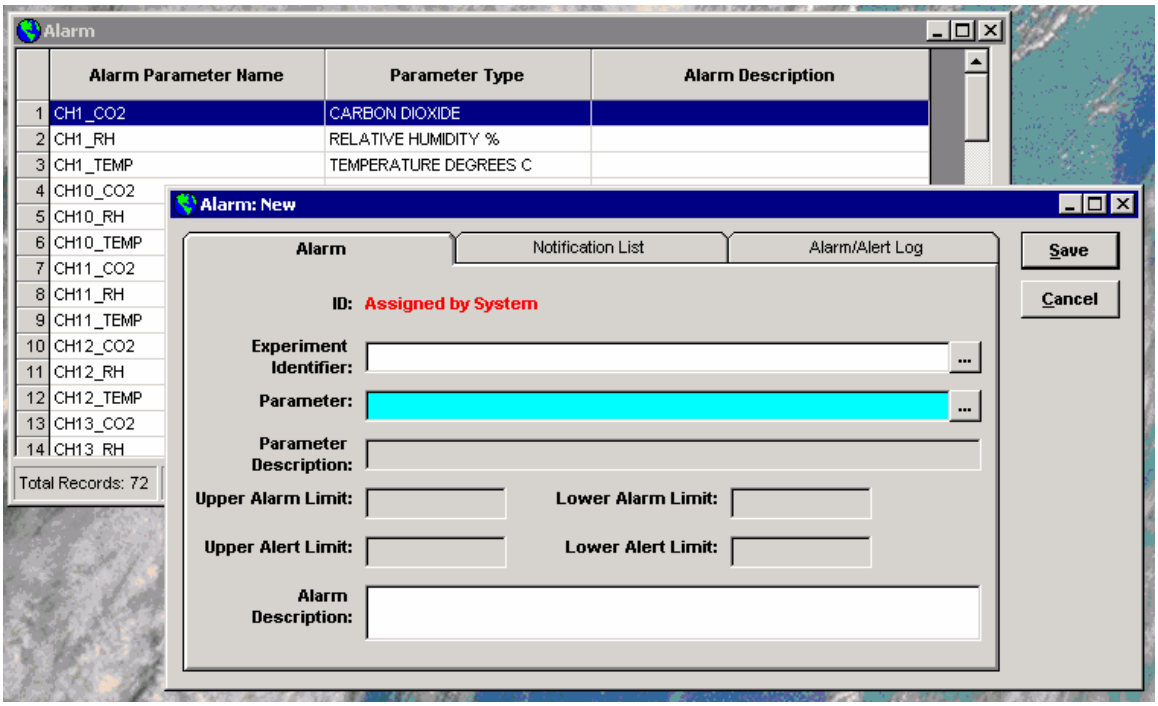

Figure 9. Add Alarm Form

The Add Alarm Form allows an alarm to be defined by selecting a parameter and then selecting the Notification List, personnel can be added to the alarm. Options exist for phone, emergency phone, email, display or audible alert. At this time only the email option is functional. Selecting *Alarm/Alert Log* will display a list of all alarms for that parameter during that experiment. Alarm Limits are not functional here (and will be removed shortly).

Selecting Manual Data Entry back at the Experiment Menu brings up the Parameter Data – Manual Data Entry Form. This form is shown in Figure 10. The Parameter Name and Data Value are currently the only required fields, but collection date and time will be soon.

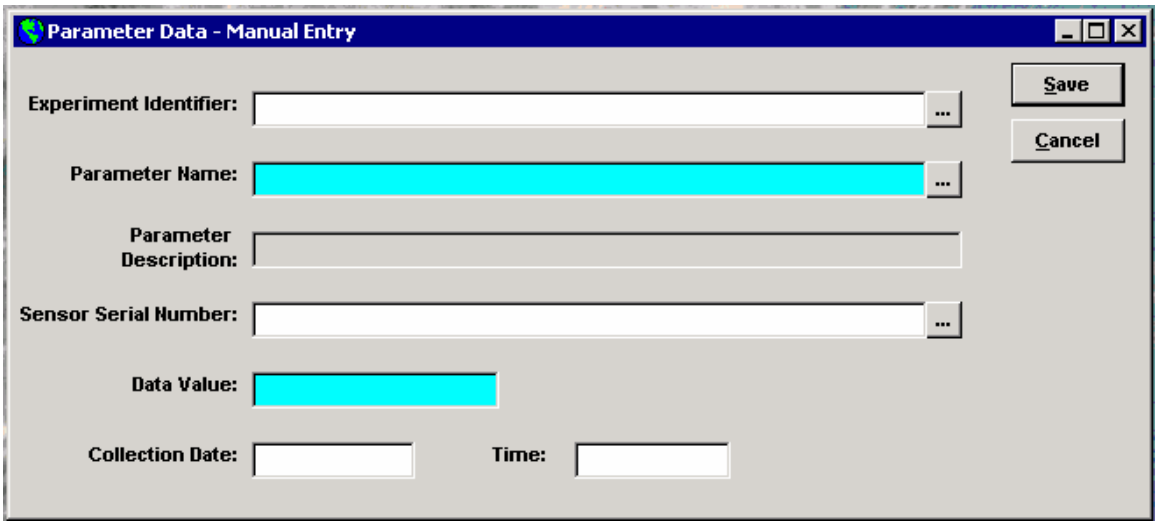


Figure 10. Manual Data Entry Form

Parameter data can be retrieved from the database by right clicking on the parameter and selecting “EDIT”. This will bring up the parameter edit form with a “Export Parameter Data” button.

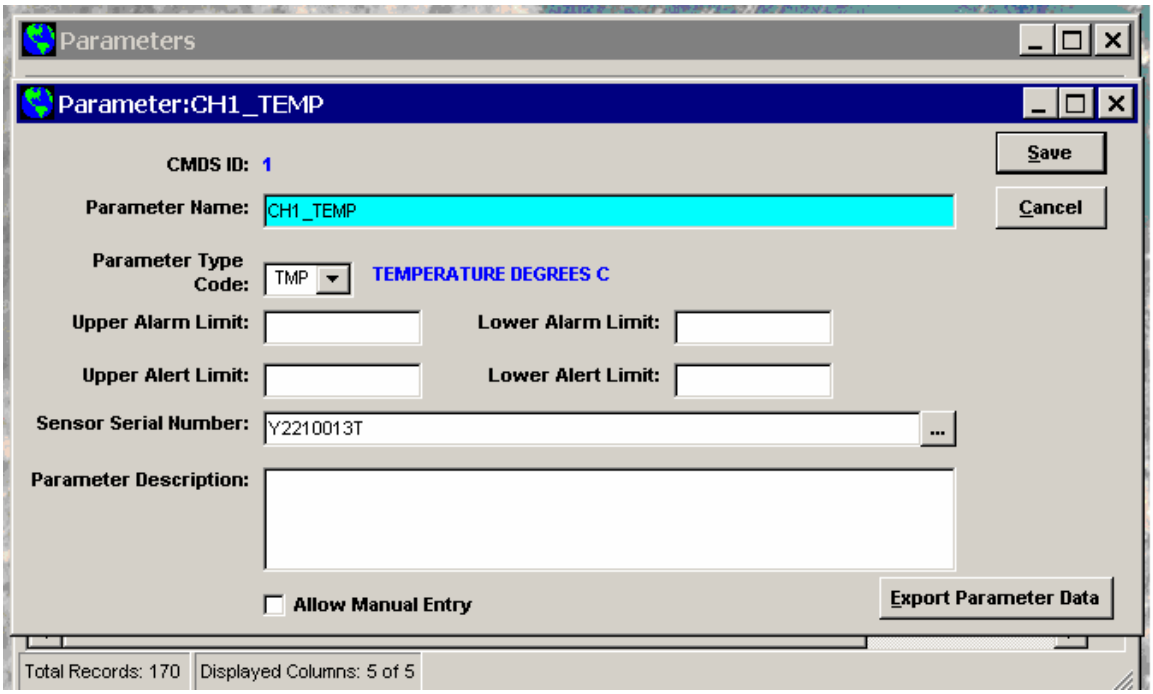


Figure 11. Parameter Edit Form

Selecting the button will bring up a form with two calendars; the start and end date/time. When the start and end has been entered, select “Export Parameter Data” and the data will be on the clip board ready to be pasted into an Excel spread sheet. Use “Text to Columns” under “Data” to convert the column to your data and a date time stamp.

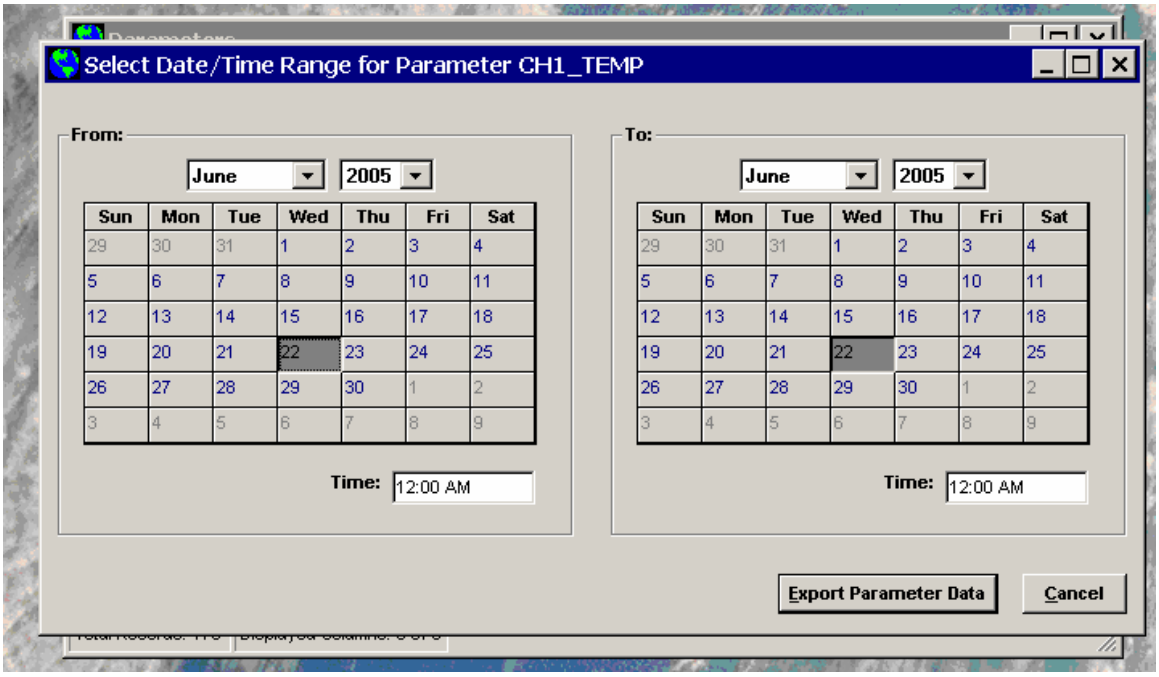

Figure 11. Export Parameter Data